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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,304	12/11/2001	Yao Wang	EMC-01-201	7237

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EXAMINER	
ENGLAND, DAVID E	
ART UNIT	**PAPER NUMBER**
2143	

MAIL DATE	DELIVERY MODE
10/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/017,304	WANG ET AL.	
	Examiner	Art Unit	
	David E. England	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

OC

DETAILED ACTION

1. Claims 1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 5, 7, 8, 16, 18, 20 – 22, 24 – 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colby et al. (6449647) (hereinafter Colby) in further view of Chiou et al. (6792507) (hereinafter Chiou).

4. Referencing claim 1, as closely interpreted by the Examiner, Colby teaches a method, operable on a computer system, for managing network resources for transfer of data stored on a first data storage system to a second data storage system in a data replication process, the method comprising the computer-executed steps of:

5. requesting from a server for services on a network, an allocation of bandwidth for data copying from the first data storage system to the second data storage system over the network based on an estimate of the data to be copied and a known time period in which to copy said data, (e.g. col. 2, line 65 – col. 3, line 9, col. 9, lines 5 – 40 & col. 11, lines 28 – 67),

6. wherein the bandwidth allocation is determined based on an estimate of data to be copied and a known time period, (e.g., col. 9, lines 5 – 40 & Table 1);

7. transferring data in response to the bandwidth allocation from the server based on the request, (e.g. col. 9, lines 5 – 24);

8. monitoring network traffic performance characteristics during the data transfer, (e.g. col. 9, lines 5 – 24); and

9. responsive to the monitored network traffic characteristics, selectively requesting an effect on the bandwidth allocation, (e.g. col. 9, lines 5 – 24),

10. but does not specifically teach managing network resources for copying data stored on a first data storage system to a second data storage system, wherein each data storage system includes an array of data storage devices on which data involved in the copying is stored; and

11. copying data.

12. Chiou teaches managing network resources for copying data stored on a first data storage system to a second data storage system, wherein each data storage system includes an array of data storage devices on which data involved in the copying is stored, (e.g., col. 7, lines 20 – 47 & col. 10, lines 37 – 63, *"update"*); and

13. copying data, (e.g., col. 10, lines 37 – 63, *"update"*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because when the requesting hosts and the target devices are geographically separated as in the Internet environment, their distributed cache scheme implementation may not always produce the desired performance gains due to the data transmission latency across wide area networks,

therefore copying data to devices that are geographically closer to requesting hosts lessens the latency of data transferred and bandwidth consumption.

14. Referencing claim 2, as closely interpreted by the Examiner, Colby teaches the effect requested is to increase bandwidth allocation, (e.g. col. 9, line 36 – col. 10, line 8).

15. Referencing claim 3, as closely interpreted by the Examiner, Colby teaches the request is in accordance with a Java-based protocol, (e.g. col. 5, lines 28 – 48).

16. Referencing claim 4, as closely interpreted by the Examiner, Colby teaches the effect requested is to increase the bandwidth allocation based on not meeting at least one performance criterion, (e.g. col. 9, line 36 – col. 10, line 8), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, *"update"*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

17. Referencing claim 5, as closely interpreted by the Examiner, Colby teaches the at least one performance criterion is a predetermined data transfer rate, (e.g. col. 9, line 36 – col. 10, line 8).

18. Referencing claim 7, as closely interpreted by the Examiner, Colby teaches the monitored internet network traffic characteristics includes information regarding packet latency, (e.g. col. 9,

lines 5 – 35), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, *"update"*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

19. Referencing claim 8, as closely interpreted by the Examiner, Colby teaches the monitored internet network traffic characteristics includes information regarding packet loss, (e.g. col. 9, lines 5 – 24 & TABLE 1), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, *"update"*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

20. Referencing claim 16, as closely interpreted by the Examiner, Colby teaches the data replication is carried out in accordance with a replication policy, (e.g. col. 5, lines 29 – 48).

21. Claims 18, 20 – 22, 24 – 26 and 28 are rejected for similar reasons stated above.

22. Claims 17 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colby and Chiou as applied to claims 1, 9, 16, 18, 19 and 26 above, and in view of Lyon et al. (6028841) (hereinafter Lyon).

23. As per claim 17, as closely interpreted by the Examiner, Colby and Chiou do not specifically teach the replication policy defines replication groups including devices distributed between the first and second data storage systems and the data replication process is completed when all devices in the replication groups are synchronized. Lyon teaches the replication policy defines replication groups including devices distributed between the first and second data storage systems and the data replication process is completed when all devices in the replication groups are synchronized, (e.g. col. 6, lines 7 – 15). It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to combine Lyon with the combine system of Colby and Chiou because synchronizing all devices would guarantee that all control functions see identical stimuli.

24. Claim 27 is rejected for similar reasons as stated above.

Response to Arguments

25. Applicant's arguments filed 08/16/2007 have been fully considered but they are not persuasive.

26. **In the Remarks**, Applicant argues in substance that Colby fails to teach determining a bandwidth based on an estimate of the data to be copied and the time period in which to copy the data.

27. As to the First Remark, Examiner would like to draw the Applicant's attention their specification on page 56 where it is stated that the "In step 815, the amount of data to be replicated is estimated". The specification does not disclose how the data is estimated, only that it comes up with an amount. Furthermore, the prior art of Colby teaches that the content-size is used to determine the size of the requested flow and that if a content is "hot" that would mean that a large amount of requests for data is received in a period of time. Furthermore, the burstiness of a flow is determined by calculating the number of flows per content per time unit. (column 9, line 5 et seq.) It is very clear that Colby utilized the size of data or amount of data to be sent in a period of time. Furthermore, the number of hits or "hot" data would determine the amount of bandwidth the device would need because the device would have to respond to a high level of demands and to keep up with the demands, one would have to monitor those hits so that bandwidth may be allocated during a busy time period.

28. All other responses to the Applicant's arguments fall under the same light as the above response.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David E. England
Examiner
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